IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: HAGIWARA et al.

Application No. 10/584,482

Filed: June 23, 2006

Confirmation No. 3652

For: METHOD FOR CONTROLLING SR PROTEIN PHOSPHORYLATION, AND ANTIVIRAL AGENTS WHOSE ACTIVE INGREDIENTS COMPRISE AGENTS THAT CONTROL SR PROTEIN ACTIVITY

Examiner:

Art Unit:

Attorney Reference No. 6235-76051-01

CERTIFICATE OF MAILING

I hereby certify that this paper and the documents referred to as being attached or enclosed herewith are being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: MAIL STOP AMENDMENT COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450 on the date shown below.

Attorney or Agent for Applicant(s)

Date Mailed August 28, 2006

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EXHIBIT A

TRANSMITTAL LETTER

Enclosed is an Amendment for the above application. The fee has been calculated as shown below.

CLAIMS AS AMENDED

For	No. after amendment	No. paid for previously		Present Extra	Rate	Fee
Total Claims	23	- 20*	=	3	$50.00	$ 150.00
Indep. Claims	3	- 3**	=	0	$200.00	$ 0.00
Mult. Dep. Claims Fee (if not previously paid)					$360.00	
One-month Extension of Time					$120.00	
Two-month Extension of Time					$450.00	
Three-month Extension of Time					$1,020.00	
TOTAL ADDITIONAL FEE FOR THIS AMENDMENT						$150.00

* greater of twenty or number for which fee has been paid.
** greater of three or number for which fee has been paid.

☒ A check in the amount of $150.00 is attached.

☒ Please charge any additional fees that may be required in connection with filing this amendment and any extension of time, or credit any overpayment, to Deposit Account No. 02-4550. A copy of this sheet is enclosed.

☒ Please return the enclosed postcard to confirm that the items listed above have been received.

Respectfully submitted,

KLARQUIST SPARKMAN, LLP

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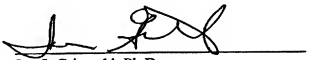
By 
Ian J. Griswold, Ph.D.
Registration No. 57,338

cc: Docketing
William D. Noonan, M.D.

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PRELIMINARY AMENDMENT

Please amend the claims as indicated below prior to examination of this application or calculation of the claim fee.

Amendments to the Claims are reflected in the listing of claims, which begins on page 2.

Remarks begin on page 7.

Claims

1. (Original) An antiviral agent comprising as an active ingredient an SR activity-controlling agent that controls an activity of an SR protein.

2. (Original) The antiviral agent of claim 1, wherein the SR protein is any one of SF2/ASF/SRp30a, SC35/PR264/SRp30b, SRp30c, HRS/SRp40, SRp46, or SRp75.

3. (Currently Amended) The antiviral agent of claim 1 ~~or 2~~, wherein the SR activity-controlling agent is a substance or composition that enhances dephosphorylation of an SR protein.

4. (Original) The antiviral agent of claim 3, which is an activator that activates Phosphatase 2A.

5. (Original) The antiviral agent of claim 4, which is an expression vector for gene therapy, which carries an HIV tat gene, an adenovirus E4-ORF4 gene, or a vaccinia virus VH1 gene.

6. (Currently Amended) The antiviral agent of claim 1 ~~or 2~~, wherein the SR activity-controlling agent is a substance that inhibits an SRPK.

7. (Original) The antiviral agent of claim 6, wherein the SRPK is an SRPK 1 or SRPK 2.

8. (Currently Amended) The antiviral agent of claim 1 ~~or 2~~, wherein the SR activity-controlling agent is an SRPK gene expression inhibitor.

9. (Previously Presented) The antiviral agent of claim 8, wherein the SRPK gene expression inhibitor is an miRNA, siRNA, or morpholino oligo targeting an SRPK, or an expression vector for the miRNA or siRNA.

10. (Currently Amended) The antiviral agent of claim 1 ~~or 2~~, wherein the SR activity-controlling agent is a substance having the activity of antagonizing an SR protein.

11. (Original) The antiviral agent of claim 10, wherein the substance having the activity of antagonizing an SR protein is an expression vector for hnRNPA1.

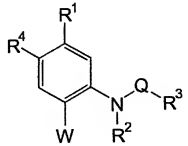
12. (Currently Amended) The antiviral agent of claim ~~any one of claims 1 to 11~~, wherein the virus is: (1) any one of the following RNA viruses: a human immunodeficiency virus (HIV), severe acute respiratory syndrome (SARS), poliovirus, human rhinovirus, adult T cell leukemia virus (HTLV-I), hepatitis A, C, D, and E viruses, vaccinia virus, Japanese encephalitis virus, dengue virus, human coronavirus, Ebola virus, influenza virus, or sindbis virus, or (2) any one of the following DNA viruses: a herpes simplex virus, human adenovirus, hepatitis B virus, cytomegalovirus, EB virus, herpesvirus, human herpesvirus, smallpox virus, polyoma virus, or human papilloma virus.

13. (Original) A method for screening for an antiviral agent, which comprises the steps of: reacting a test compound with an SRPK, testing the ability of the SRPK to phosphorylate an SR protein, and selecting a compound that inhibits that ability.

14. (Original) The screening method of claim 13, which comprises the step of testing the ability of an SRPK to phosphorylate an SR protein using, as a substrate, an SR protein or a peptide with two or more consecutive Arg-Ser (RS) or Ser-Arg (SR).

15. (Currently Amended) A method for producing antiviral agents, which comprises the step of formulating a compound obtained by the method of claim 13 ~~or 14~~.

16. (Original) An aniline derivative represented by the following formula (I):



(I)

or a pharmaceutically acceptable salt or hydrate thereof;

wherein, R^1 represents a hydrogen atom, a C_{1-6} alkyl group which may have a substituent, a C_{2-6} alkenyl group which may have a substituent, a C_{2-6} alkynyl group which may have a substituent, a C_{6-10} aryl group which may have a substituent, a halogen atom, a nitro group, a cyano group, an azide group, a hydroxy group, a C_{1-6} alkoxy group which may have a substituent, a C_{1-6} alkylthio group which may have a substituent, a C_{1-6} alkylsulfonyl group which may have a substituent, a carboxyl group, a formyl group, a C_{1-6} alkoxycarbonyl group which may have a substituent, an acyl group, an acylamino group, or a sulfamoyl group;

R^2 represents a hydrogen atom, a C_{1-6} alkyl group which may have a substituent, or an aryl group which may have a substituent;

R^3 represents a C_{1-6} alkyl group which may have a substituent, a C_{2-6} alkenyl group which may have a substituent, a C_{6-10} aryl group which may have a substituent, a nitrogen-containing heterocycle which may have a substituent, or a condensed aromatic heterocycle which may have a substituent;

R^4 represents a hydrogen atom or a halogen atom;

Q represents -C(O)-, -C(S)-, $-SO_2-$, -C(S)NHC(O)-, -C(O)NHC(O)-, or -C(O)NHC(S)-;

W represents a hydrogen atom, a C_{1-6} alkyl group which may have a substituent, a C_{6-10} aryl group which may have a substituent, a halogen atom, a hydroxy group, a C_{1-6} alkoxy group which may have a substituent, a C_{1-6} alkylthio group which may have a substituent, a nitrogen-containing heterocycle which may have a substituent, a condensed aromatic heterocycle which may have a substituent, or a group represented by the following formula (II):

(II)

wherein, R^5 and R^6 are the same or different and each represents a hydrogen atom, a C_{1-6} alkyl group which may have a substituent, a nitrogen-containing heterocycle which may have a substituent, a condensed aromatic heterocycle which may have a substituent, an acyl group, or an acylamino group;

the above R^5 and R^6 together with the adjacent nitrogen atom may form a heterocycle which may have a substituent, and the heterocycle may be a condensed aromatic heterocycle which may have a substituent;

the above R^5 and R^6 may be a cycloalkylidene amino group which may have a substituent, or an aromatic condensed cycloalkylidene group which may have a substituent.

17. (Original) The aniline derivative of claim 16, or a pharmaceutically acceptable salt or hydrate thereof, wherein the above R^1 is a hydrogen atom, a C_{1-6} alkyl group which may have a substituent, or a halogen atom.

18. (Currently Amended) The aniline derivative of claim 16 ~~or 17~~, or a pharmaceutically acceptable salt or hydrate thereof, wherein the above R^2 is a hydrogen atom or a C_{1-6} alkyl group.

19. (Currently Amended) The aniline derivative of claim ~~any one of claims 16 to 18~~, or a pharmaceutically acceptable salt or hydrate thereof, wherein the above R^3 is a C_{6-10} aryl group which may have a substituent, or a nitrogen-containing 5- to 10-membered heteroaryl group which may have a substituent.

20. (Original) The aniline derivative of claim ~~any one of claims 16 to 19~~, or a pharmaceutically acceptable salt or hydrate thereof, wherein the above R^4 is a hydrogen atom.

21. (Original) The aniline derivative of claim ~~any one of claims 16 to 20~~, or a pharmaceutically acceptable salt or hydrate thereof, wherein the above W represents a hydrogen atom, a halogen atom, or a group represented by the following formula (II):

(II)

wherein, R^5 and R^6 are the same or different and each represent a C_{1-6} alkyl group which may have a substituent; or
the above R^5 and R^6 together with the adjacent nitrogen atom may form a heterocyclic group which may have a substituent, and the heterocyclic group may be a condensed aromatic heterocyclic group which may have a substituent.

22. (Original) An SRPK inhibitor comprising as an active ingredient ~~any one of~~ the aniline ~~derivatives~~ derivative of claim ~~claims~~ 16 ~~to 21~~, or a pharmaceutically acceptable salt or hydrate thereof.

23. (Original) An antiviral agent comprising as an active ingredient ~~any one of~~ the aniline ~~derivatives~~ derivative of claim ~~claims~~ 16 ~~to 21~~, or a pharmaceutically acceptable salt or hydrate thereof.

REMARKS

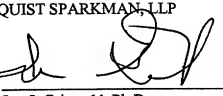
By this Preliminary Amendment, claims 3, 6, 8, 10, 12, 15, and 18-23 have been rewritten to remove multiple dependencies. After entry of this amendment, claims 1-23 are pending in the application.

The amendments are made to reduce the claim fees and/or conform the claims to U.S. law and practice. No new matter has been added by this amendment.

It is believed that this application is in condition for substantive examination. If any matters remain to be discussed prior to examination, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

KLARQUIST SPARKMAN, LLP



By _____
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